CLAIMS

1. Apparatus comprising:

a header having a surface defining a substantially horizontal plane; and

a chip-level optical transceiver carried by a bench disposed in a tilted state for aligning the chip-level optical transceiver with an optical fiber.

2. Apparatus of claim 1, further comprising an optical fiber aligned with the chip-level optical transceiver.

3. Apparatus of claim 2, further comprising a package securing and containing the optical fiber, the bench, and the chip-level optical transceiver carried by the bench.

4. Apparatus of claim 3, wherein the package comprises:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

5. Apparatus of claim 4, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

6. Apparatus of claim 5, wherein the chip-level optical transceiver comprises:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

7. Apparatus of claim 6, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

8. Apparatus of claim 7, wherein the first wavelength of light is different from the second wavelength of light.

9. In an optical fiber and a header mounted adjacent the optical fiber, apparatus therein comprising a chip-level optical transceiver supported by a bench carried by the header in a tilted state aligning the chip-level optical transceiver components with the optical fiber.

10. Apparatus of claim 9, further comprising a package securing and containing the optical fiber, the bench, and the chip-level optical transceiver carried by the bench.

11. Apparatus of claim 10, wherein the package comprises:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

12. Apparatus of claim 11, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

13. Apparatus of claim 12, wherein the chip-level optical transceiver comprises:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

14. Apparatus of claim 13, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

15. Apparatus of claim 14, wherein the first wavelength of light is different from the second wavelength of light.

16. Apparatus of claim 14, wherein the first optical path is coincident to the second optical path.

17. A method comprising steps of:

providing an optical fiber;

providing a bench that supports a chip-level optical transceiver;

placing the bench in front of the optical fiber;

activating the chip-level optical transceiver; and

tilting the bench until the chip-level optical transceiver is aligned with the optical fiber and an optical signal is achieved.

18. The method of claim 17, further comprising mounting the optical fiber, the bench, and the chip-level optical transceiver carried by the bench in a package.

19. The method of claim 18, the package comprising:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

20. The method of claim 17, wherein the chip-level optical transceiver comprises:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting

device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.